SOLUTION | UPS

UPS (Uninterruptible Power Supply)

Digital Signal Processor

CM COMANDOS LINEARES®

Innovation, quality, technology and reliability. Trademarks of CM Comandos Lineares solutions

THE COMPANY

With over 38 years in operation, CM Comandos is today one of the largest UPS manufacturers in the Latin America.

Besides, its is the only leader in solutions for the corporate market. Certified by ISO-9001:2008 standards, CM Comandos highlights its commitment to excellence for its products and full customer satisfaction.

APPLICABILITY

CM Comandos Lineares UPS is suitable for critical- mission usage in all types of corporations, providing protection against power disturbances, such as power outage, micro outages, noise, harmonic disturbance, spikes, transients, under and over voltage and frequency variations.

BENEFITS

CM Comandos equipment operates under greater precision, adds more features and are the safest ones.

Features that create high reliability and productivity for many types of applications, reducing flaws and as result, maintenance costs. In short, being a CM Comandos client means having the return on invested capital and warranties that only a company with full technical support can offer

TECHNICAL SUPPART

By choosing the CM Comandos Lineares brand precuts you can count on the best technical support prior and post-sales from a company that has established itself over these 38 years as the market leader.

Cutting-edge instrumentation, highly skilled workers, with domestic coverage and 24-hour service seven days a week, call center, and certified processes ensure the excellence of our support services.

CM COMANDOS LINEARES

High Technology in Digital Processing Of Signals - DSPP

We are living in a world that is becoming faster and more practical. A world connected by processors, chips, software and peripherals. But that is as yet not enough. That is why the world turns to immediate data processing technology.

CM Comandos Lineares is one step ahead and offers its clients products equipped with a revolutionary technology,called Digital Signal Processing -- DSP.

Today this technology is present in the most sophisticated electrical systems due to its high speed and reliability. Digital Signal Processors are able to process ten million samples per second. This means real time processing -- the signal is processed the instant it is received, without retardation or delays.

THE MOST MODERN CORPORATE UPS'

The entire range of Solution UPS' counts on DSP technology. This characteristic affords it high performance and reliability, making them ideal for mission applications. That is, they protect the applications in which the continuity of operations is of fundamental importance.

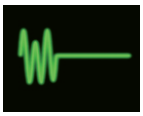
Designed with intensive DSP technology resources, the Solution UPS' add new and advanced resources, which establish a new concept in development, in which the equipment firmware may be used thus adding new functions to the already installed units.

If you are thinking of acquiring UPS', count on the solutions from CM Comandos, which assure state-of-the-art technology, maximum protection, digital precision and in real time.

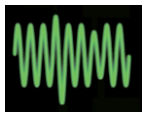
Solution

Digital Signal Processor

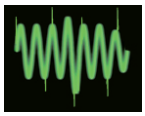
THE PROBLEMS: ELECTRICAL DISTURBANCES



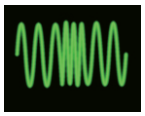
Power Failures, Micro Interruptions and Voltage Drops



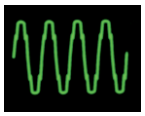
Over voltages and Voltage Dips



Spikes, Noise and Transients

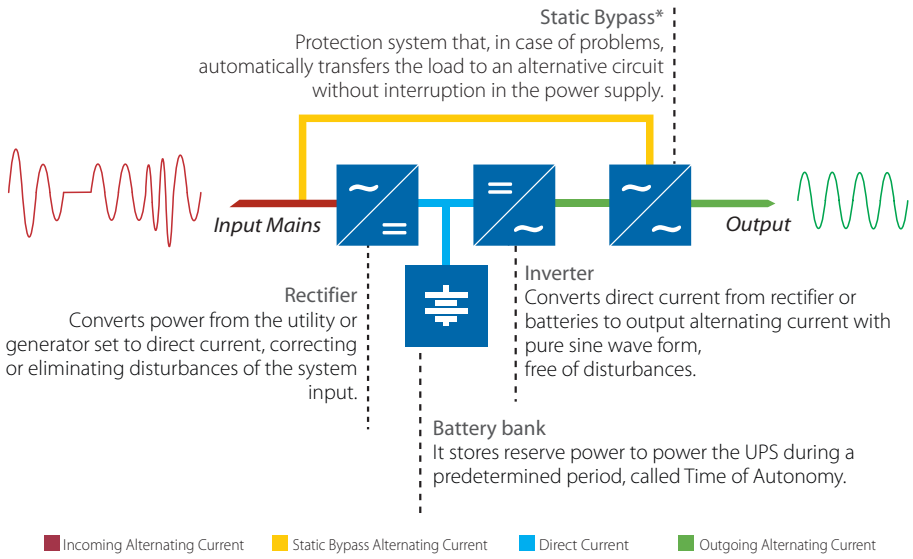


Frequency Variations



Harmonic Distortion

THE SOLUTION: ON LINE - DOUBLE CONVERSION TECHNOLOGY



MAIN CHARACTERISTICS

Tecnologia Avançada DSP (Digital Signal Processor)
Permite funções avançadas e exclusivas em tempo real.

Phase Sync with the Electrical Input Network
Control Phase Locked Loop Control by DSP.

Possibilidade de Upgrade do Firmware do DSP
Garante a atualização e preservação do investimento.

Sistema Bypass Estático*
Adiciona proteção e eleva a confiabilidade da carga sensível.

Proteção de Sub e Sobre Tensão de Entrada
Desliga automaticamente o Retificador, protegendo contra tensões fora da faixa.

Measurements in True RMS
The DSP analyzes the electrical network with accuracy of multimeters.

Output Isolation Transformer
Provides greater protection by being galvanically isolated from the input mains.

Shape of Sinusoidal Wave with THD less than 1%
Suitable for the most demanding sensitive loads.

Compatible with All Generator Sets
Accuracy and total protection for operation with generator sets.

INTERFACES OF MANAGEMENT REMOTE*

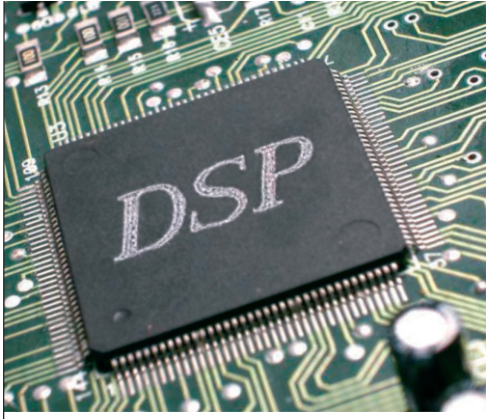
They are made up of several tools. The NetMate SNMP Adapter allows you to remotely manage the UPS via the Internet through a web browser, monitor status and send alerts via email.

IP Power software is a Windows Application management tool and the Client version is specific to automate shutdown, which can automatically and simultaneously shut down multiple servers and stations.

The ArmModbus Adapter allows integration of the UPS via a RS485, to Building Automation Systems.

MANAGEMENT REMOTE SNMP *

The Solution No-Breaks count with remote management via the SNMP protocol, through the NetMate Adapter, with the implemented RFC1628 MIB. Allow access through TCP / IP connection local or remote and can be accessed via the web browser or through IP Power software.



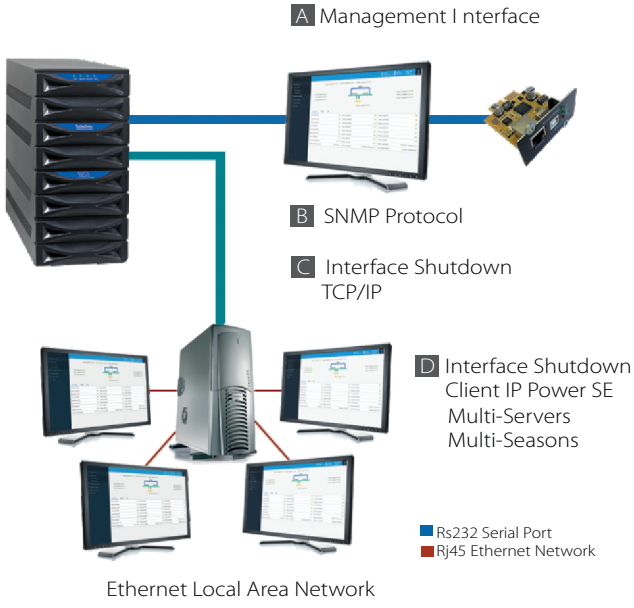
APPLICATIONS

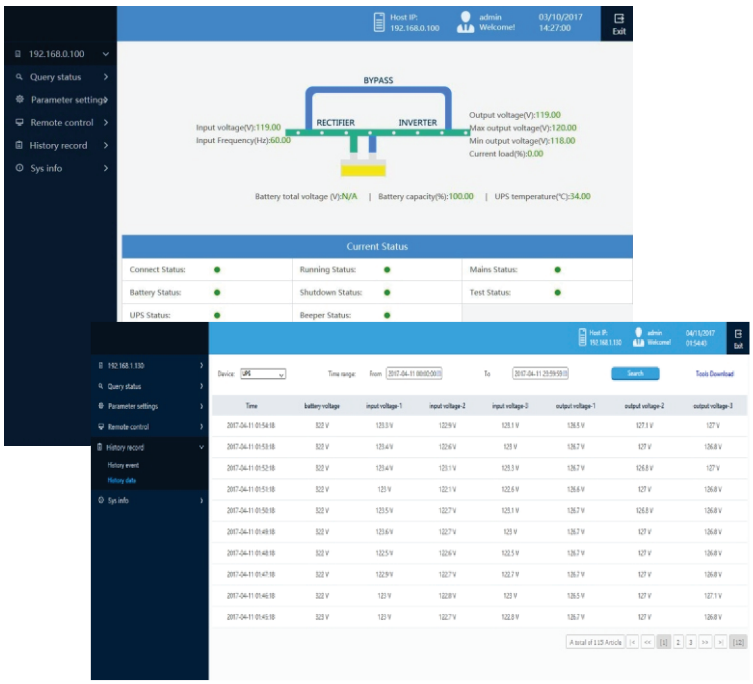
- Banking Aerutomation
- Commcial Automation
- Industrial Automation
- Graphic Process Automation
- Medical Diagnosing and Imaging Systems
- Telecommunications
- Information Technology
- Computers and Peripherals
- Mini-labs Photographic film Developers
- PDV's
- Laboratories
- Scientific Instrumentation
- Microfilming
- Data Storage Centres

UPDATING THE DSP FIRMWARE

This resource allows the updating of the software version driving the DSP chip, implements improvements customising and preserving customizando e preservando investments made.

INTERFACES OF MANAGEMENT REMOTE**





TECHNICAL SPECIFICATIONS

Technology
- On Line Double Conversion
- Rectifier - Reverse Battery Bank
- Bypass Static Isolation (optional)
- DSP Microprocessed Digital Control
- Inverter PWM at 20 Khz
- Firmware Upgrade

Input
- **Voltage:**
  - •220 V (standard)
  - •110 V (optional)
  - •Bivolt 110 e 220 V (opcional)
- **Permissible Variation:**± 15% of the nominal voltagel
- **Frequency:** 50 or 60 Hz
- **Permissible Frequency Variation:** ± 6%
- **Configurations:** Single Phase: F + N + Tou F + F + T

Output
- **Voltage:**
  - • 110 V (standard)
  - • 220 V (standard)
- **Available Power Ranges:**
  - •2 kVA / 1,2 kW
  - •3 kVA / 1,8 kW
  - •5 kVA / 3,0 kW
  - •7,5 kVA / 5,0 kW
  - •10 kVA / 7,5 kW
  - •15 kVA / 10,5 kW
- **Static Control:** ±1% nominal
- **Frequência:** 50 ou 60 Hz
- **Frequency Variation:** ±0,05% In battery mode
- **Synchronisation with the incoming mains:** Yes
- **Configuration:** Single Phase F + N + T ou F + F + T
- **Wave Shape:** sinusoidal
- **THD Harmonic Distortion:** less than 1%, total
- **Peak Factor:** 3:1
- **Overload Capacity:** 125% for 25 secs
- **Short Circuit Protection:** Yes
- **Short Circuit Current:** 2 x I nominal
- **Efficiency:** 90%

Batteries
- **Line Voltage:**
  - • 96 VDC (2 to 3 kVA)
  - •192 VDC (5 to 15 kVA)
- **Recharging System:**controlled, automatic
- **Recharging Time:**8 to10 hours for 90% of the charge
- **Type:** sealed, maintenance free

Static Bypass *
- **Operation:** Controlled by DSP
- **Transfer Time:** 0 milliseconds (null)
- **Retransfer to Normal Mode:** automatic

Electrical Protections
- Sub and Over Voltage Input and Output
- Sub and On DC Voltage and Battery
- Overload and Short Circuit
- Minimum Battery Discharge
- About Temperature

Alarms
- **Controlled by the DSP processor**
- **Types of Alarms:**
  - •Sound:
    - » Autocheck Boot
    - » Lack of network
    - » Network Frequency Out of Range
    - » Pre-alarm of Batteries
    - » Inverter Overload
    - » Internal UPS Failure
  - •Signaling: Panel Status LEDs
    - » Autocheck Boot
    - » Normal Operation
    - » Network Present
    - » Inverter Enabled
    - » Network Failure
    - » Battery Pre-alarm
    - » Downloaded Battery
    - » Inverter Overload
    - » Network Frequency Out of Range
    - » Internal Failure

Operating Characteristics
- Audible Noise: 55 dBA at 60 dBA at 1 meter
- MTBF (Mean Time Between Failures): 50 thousand hours
- MTTR (Mean Time To Repair): 30 minutes
- Environment Temperature:
  - • UPS: 0ºC to 40ºC
  - • Batteries: 0ºC to 30ºC
  - • Recommended: 20ºC and 25ºC
- Relative Humidity:
  - • 0% to 95% non-condensing
  - • Recommended: 45% to 55%
- Altitude: up to 1,000m
- Type of Recommended Environment:
  - • Indoors, sheltered installation
  - • Atmosphere: clean, free from conductive particles, toxic gasses, liquids and flammables.
- Degree of Protection: IP-20

UPSMON Software *
- Event Registration
- Automatic Shutdown
- Sending Broadcast and E-mail Alarms
- Remote Monitoring via TCP / IP
- Measurements:
  - » Output Power in%
  - » Output Voltage
  - » Battery Voltage
  - » Input Voltage
  - » Input Frequency

Physical and Mechanical Characteristics
- Compact Dimensions
- Cabinet Structure:
  - •Rack: metallic, monobloc
  - •Front Panel: in high strength ABS
  - • Finishing: Epoxy powder paint in graphite color With heat treatment and anti-corrosive
- TTransformer Isolator: with electrostatic shield *
- Communication Port:
  - •Serial RS232C Isolated Full Duplex -DB9 Female
  - •Dry Contact DB9 Female

Management Interfaces*
- Mono and multiuser, client server and multiservers
- A number of servers on a single UPS
- Shutdown and Management Tools
- Protocols:
  - • Serial Rs232
  - • Serial Rs485*
  - •SNMP / Telnet / http / TCP/IP*
- Management Software*
  - •UPSMAN / UPSMON / Client RCCMD
  - •SNMP Adapter CS121BL
  - •UNMS II
- Environments and Operating Systems
  - •Windows 7 / 2003 / 2007 / Vista
  - •Linux / Novell / Java
  - •Unix / IBM AIX / HP-UX / SunOs / Solaris / OSF/1 AS-400
  - •HP-Open View / IBM-Tivoli / CA-Unicenter TNG / SunConnect / SunNet Manager / Novell NMS / ManageWise

(Trademarks of the respective manufacturers)

Model	Power KVA	Physical Dimensions H x W x D mm	Weight (with batteries)
2000	2,0	620 X 200 X 600	70
3000	3,0	620 X 200 X 600	72
5000	5,0	720 X 200 X 600	86
7500	7,5	720 X 200 X 600	107
10000	10,0	790 X 400 X 775	119
15000	15,0	790 X 400 X 775	245

* Optional

Sistema de Sustentabilidade Auditado

CM COMANDOS LINEARES®

Av. Eng. Alberto de Zagottis, 760 - 04675-085 - São Paulo - SP
Tel.: (11) 5696-5000
www.cmcomandos.com.br

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